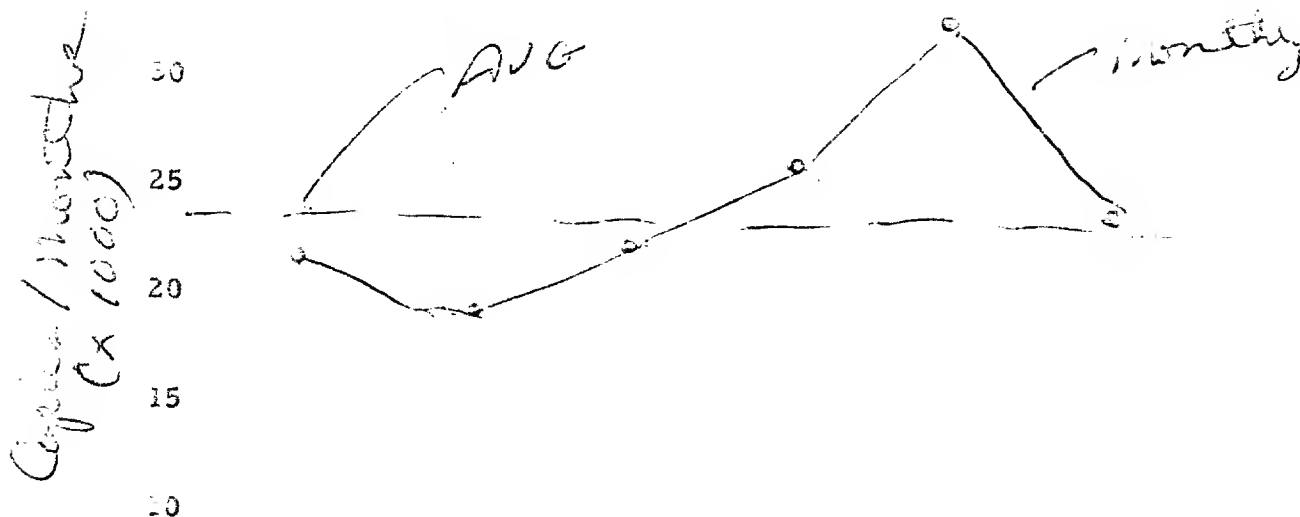## TIME/COST STUDY - XEROX MACHINE

What do we pay for the machine and what does it do?

Month	Number of copies
December 1965	21,454
January 1966	18,537
February 1966	21,860
March 1966	25,242
April 1966	31,159
May 1966	21,881
Total	140,133
Monthly Average	23,355

	Dec.	Jan.	Feb.	Mar.	April	May
$ cost/cy	747.26	648.80	760.45	869.76	1041.48	761.13
$ cost/maint	25.00	25.00	25.00	25.00	25.00	25.00
Σ $ cost	772.26	673.80	785.45	894.76	1066.48	786.13
ΣΣ $ cost		1446.06	2231.51	3126.27	4192.75	4978.88

Other recur-
ring cost
(6 months)   95.00

DD/S&T
FILE COPY

TOTAL COST   5073.88
AVG. COST/MONTH   845.65

Who runs the machine?   Secretaries and Professionals

- Assume that secretaries (avg. GS-5) run 90% of all copies.

- Assume that Professionals (avg. GS-13) run 10% of all copies.

It takes 45 seconds to run one copy; additional copies take 15 seconds each.   If a secretary, on the average, is required to run 10 copies of the same document, the total period of operation per month by secretaries will average

$$90\% \cdot \frac{23,355 \text{ cys/month}}{10 \text{ cys/run}} \cdot 3 \text{ min/10 cys} = 5779 \text{ min} = 96.31 \text{ hrs}$$
(operation by secretaries)

If each professional runs two copies of a document the total period of operation per month by professionals will average

$$10\% \cdot \frac{23,355 \text{ cys/month}}{2 \text{ cys/run}} \cdot 1 \text{ min/2 cys} = 1167.5 \text{ min} = 19.45 \text{ hrs}$$

Secretary's time is worth $2.74/hr.

Professional's time is worth $6.01/hr.

Cost of operators/months = $2.74 X 93.31 hr + $6.01 X 19.45 hr =
$255.67   + $116.89 = $372.56

Assume that on the average a secretary must wait for the machine for 1/2 of the normal run and professionals do not wait at all; an additional cost of $255.67 ÷ 2 or $127.84 in wasted time.   This should be added to the cost of a month's run.

Cost for average month (23,355 copies)

$ 845.65 – Machine
   372.56 – Operators
   127.84 – Wasted Time
$1,346.05

Cost per copy = $ .0576 (avg. month)

What if we hired a full time operator (assume a CS-4)?

The operator's salary = $390

However, the complete salary should be charged against copy production since the machine only operates a total of 178.70 hr/month or 78% of the time. Thus, cost of operation = .78 X $390 = $305.28

Cost with full time operator = $845.65 + $305.28 = $1150.93.

So, if an operator is hired (at CS-4) an operations saving of

$1346.05 - $1150.93 = $195.12/month or $2341.44/yr.

Copy cost drops to $.0492/copy (a 14.8% cut)

Intangible advantages in hiring an operator:

- Reduced maintenance

- Consistent copy quality

- Better security (one person responsible for machine, waste, etc.)

- Secretaries and Professionals spend more time doing the job for which they are responsible

- An operator could spend any spare time supporting registry and stocking office supplies

Recommendation:

- Hire a GS-3 or GS-4 operator

P.S. ON Rent vs. Buying Machine
GSA Circular A-953 indicated that
for a monthly average of 3000 copies approximately
3½ years are required to break even by